brilliant results, surpassing any other form of treatment known to us. It is in these conditions, previously beyond the remedial measures of the attending physician, that diathermy has proven itself. I may say at this time that we have had no occasion to render surgical intervention in posterior gonorrhea, since utilizing diathermy in the manner stated.

At this time I can but touch upon the subject of diathermy in gonorrhea of the female. The primary principles are the same. The application alone is different. I may also say that in women it has been my experience that I can do more in less time, with chronic gonorrhea, than I could do formerly.

I may be permitted to state that by the use of a new electrode, devised by me, and made by Wappler, chronic endocervicitis is controlled in one or two sessions. At some future time I will dilate upon this subject.

Section of Ophthalmology, November 21, 1927

TRAUMATIC OCULAR PARALYSIS WITH RETRACTION MOVEMENTS

ARNOLD KNAPP

The patient, sixty years of age, had an ethmoid operation on his left side in June, 1926. He was then seen a few days later by Dr. E. Waldstein, who found a paralysis of the internal rectus on the left side. One year later I saw the patient, through the courtesy of Dr. Waldstein, and found the condition the same as it is at present. In the primary position the left eye is deviated outward 40°. In moving both eyes to the right, the left eye comes to a full stop in the median position, when there is a widening of the palpebral fissure and apparently a protrusion of the eye, together with a slight tendency of the eye to go downward. When the eyes are moved to the left the action of the external rectus is entirely one of retraction. The eye is pulled into the orbit and the palpebral fissure gets smaller. The sight and the eye ground in both eyes are normal.

Dr. Knapp thought that the condition could be explained by a separation of the internal rectus tendon, with union of this separation to the inner wall of the orbit by scar tissue, whereby no action of the internal rectus was possible; and through the fibrous band the relaxation of the internal rectus did not follow on attempted contraction of the external rectus, and the external rectus could therefore produce only a retraction movement.

METHODS FOR PREPARING SUCCESSFUL EYE SPECIMENS GROSS AND MICROSCOPIC

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This paper is intended to outline an original method for the preparation of gross eye specimens and a method for microscopic sections that we find most satisfactory. The first has enabled us to augment our teaching equipment and the second to present faithful histological pictures.

1. *Examination*

The purpose of the laboratory examination of eyes is to study in detail the conditions recognized clinically.

To facilitate the examination in the laboratory the eye should be marked. The marking may be done by the operating surgeon before enucleation, by touching the bulb with silver nitrate near the lesions, or by using thread. Another way is to consult the pathologist and point out the pathological areas as observed in life. This latter plan is the better.

After enucleation the pathologist carefully marks the indicated areas to make certain that they are included in the microscopic sections. This is necessary because certain fixing fluids render the eye opaque at once and greatly obscure the landmarks present in the living eye.

2. *Fixation*

After the eye is marked the next step is fixation so that the picture as seen in life may be preserved unaltered. On no condition should the eye be opened before fixation (freezing is not recommended), for the entire contents of the bulb may escape.

Greeff (1) states in his "Guide to the Microscopic Examination of the Eye:" "The eye in virtue of its peculiar form and composition demands treatment differing in many respects from that sufficient for organs which are more uniform in structure and the precise relation of whose parts is less important to preserve."

The various fixing solutions in common use are unsatisfactory as Verhoeff (4) has pointed out with considerable emphasis. He stresses the frequent artificial detachment of the retina and shrinkage of exudates and ocular tunics after formalin fixation. He states that Zenker's fluid is an uncertain fixing re-agent and recommends mixing formalin with a weak alcoholic solution, adding a final word to the effect that this mixture is by no means a perfectly ideal fixing solution.

Greeff (1) nearly thirty years earlier had noted the "great shrinkage of the vitreous and almost artificial detachment of the retina" when Müller's fluid was the usual fixing reagent for eyes.

We have used Zenker's solution with 5% acetic acid and have added 10% formalin for the fixation of our eye specimens. Formol-Zenker is an old fixing solution but seems not to have been used for eyes. We find that it penetrates quickly, preserves all the ocular structures accurately and permits the later application of many histological stains. The solution should be freshly prepared because oxidation takes place rather quickly.

It has been our custom to prepare the fixing solution shortly before the enucleation. The fixing fluid should be about ten times the bulk of the eye, 110 cc.

Formula: Zenker's solution—95 cc
Acetic Acid (glacial)—5 cc
Formalin—10 cc

After the bulb has been immersed in the fixing solution about two hours small windows are cut in the sclera and the eye replaced in the fixative for 24 hours, then washed in running water

24 hours and placed directly in 80% alcohol. Razor blades are excellent for cutting the sclera. Cut the eye tangentially at opposite poles avoiding the planes to be studied later. Until the sclera is opened the eye always floats in the fixing solution. To insure uniform penetration it is, therefore, well to cover the specimen at first with a thin layer of absorbent cotton.

From now on the usual routine is followed as with any tissue. By our method of fixation the retina remains in proper position, the tissues do not shrink and all elements are well preserved. (Fig. 1).

3. *Sectioning*

After fixation is completed the eye is ready to be cut into sectors as planned from the beginning, that is, the pieces are cut out that are to be embedded in paraffin or celloidin. The cutting is done after the manner described by Greeff (1) and Verhoeff (4). Incisions are made in a plane parallel to the optic axis passing about 0.5 mm. inside the corneal limbus and just missing the lens. It is customary to section the globe in the horizontal plane unless there are lesions best studied in a different plane and to include cornea and papilla in the section with the special lesion to be studied.

The specimens we are showing have been embedded in celloidin by the slow method. After embedding in celloidin the usual microscopic sections are made and stained as may be needed.

Thick sectors are left over uncut and remain embedded in the celloidin. They are placed in 80% alcohol and as a rule either forgotten or thrown away in the course of time. These celloidin blocks become white and opaque and have no apparent value.

We have discovered, however, that these seemingly useless celloidin blocks may be reclaimed and made into excellent gross mounts useful for teaching purposes. This is accomplished by testing with oil so that the celloidin becomes clear and invisible while the section of the eye remains unaltered. The clearing of specimens is an old process. Spalteholz's (3) clearing method is well known.

Our method makes use of clearing oils following a suggestion in Guyer's (2) "Animal Micrology." So far as we know we

are the first to apply the method to unstained eyes embedded in celloidin for the purpose of making gross mounts.

4. *Clearing*

The process of clearing may be applied to new celloidin blocks or to old celloidin blocks, even those 20 years old. Several of our most successful preparations are celloidin blocks kept in alcohol about 20 years.

The method is as follows:

Cut block as desired, keeping as thick as possible. Thin blocks may curl and if this happens they must be re-embedded.

1. Place in 95% alcohol 24 hours to remove most of the water.

Subsequent steps admit of two procedures, one short (A) and one long (B).

A. *Quick Method*

2. Solution (95% alcohol 1/3)
   (Oil of Thyme 2/3) 24 to 48 hours
3. Solution (Oil of Thyme 2/3)
   (Castor Oil 1/3)

To remain in this until clear (one to several days).

4. Solution (Oil of Thyme 1/3)
   (Castor Oil 2/3)
5. Castor Oil.

B. *Slow Method*

Castor Oil only for days, weeks or months or *until perfectly clear.*

The oil of thyme must be distilled until colorless (one to three times), and be kept in the dark. The castor oil must be as nearly colorless as possible; Baker's cold process, "Crystal Castor Oil" approaches whiteness more nearly than any we have been able to procure.

After the clearing process the celloidin is invisible and the eye restored to its appearance before embedding.

This method is not intended to replace other methods of preparing gross mounts of eyes. It is an added method and permits a double use to be made of the celloidin blocks: (1) Gross specimens, and (2) Microscopic sections of the same.

The cleared blocks may now be mounted in castor oil in the usual museum jars for eyes and placed in a special cabinet as

pictured. (Fig. 2). The blocks are suspended by German silver wires to frames of glass rod. The outlines beside each eye are intended to assist the student to recognize the striking pathology. The eyes are visible from both sides and by proper lighting and some magnification considerable information may be obtained. A background of ground glass gives a pleasing effect when artificial illumination is employed.

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TRAINING OF THE BLIND IN GERMANY

Miss Betty Hirsch

I certainly deem it a great privilege to be allowed to speak here to-night, as I know that only scientific questions are taken into consideration in these meetings, and I am by no means an expert in medical science. But as the work about which I am going to speak has been built up by the help of one of our greatest eye doctors, Professor Silex of Berlin, I hope you will be a little interested in the results which we have obtained.

When I was asked for the title of my speech tonight I forgot one word, and that was the word "adult," for I am not going to speak about the education of blind children or blind young people in institutions, as they are almost the same in all countries, and I have seen so much good work done in this direction while traveling around in this country; but I want to speak about the training of our blinded soldiers and blind adult civilians, as the condition of our adult blind persons in Germany has completely changed since the war.

I have been asked by some eye doctors to tell them my opinion as to how to prepare grown persons for their future blindness if their cases are hopeless, and as I have had in the past several years the opportunity of training hundreds of grown persons in this direction I may say that I can speak out of experience. But before I pass over to this subject, I want to say a few words about the word "blindness" itself. Do not become sad, because I am not going to tell you anything sad. On the contrary, I want to say that it is a great mistake to look upon blindness as misery. It is of course a handicap, but this handicap can be eased much more than the sighted people think if they do not themselves make the blind person unhappy, of course without knowing it, by pitying him instead of learning to understand his position and helping him to feel that he is a normal human being. Seeing persons only too often forget that life, with all of its interests and activities, does not come into us from the outside but that it must be created in our minds and brain. A person with healthy, normal, open eyes can go through life without realizing or comprehending the outer world or life itself, while a blind person usually has a clear picture of life and its contacts impressed upon his mental vision. I think it seems like "carrying coals to Newcastle" when I speak about this subject here in this country where you have a Helen Keller. Another example I would like to mention is our greatest musician of all time, Ludwig Von Beethoven, who composed the most divine music when he was perfectly deaf. Did this music come from outside into his brain, or did he hear it with an inner sense? I think this question answers itself.

I think if persons who have the gift of sight would realize this they would not find so much difficulty in preparing an adult person for future blindness. Even the great Professor Silex, who throughout his life has done so much good for his patients and for blind people, shrank from telling our soldiers the truth about their condition and very often sent them to me; and the task was sometimes not very easy.

After all of the experience which I have had in this direction I am of the opinion that a doctor as soon as he knows that there is no hope of saving the eyesight should begin to prepare the patient for his blindness, and not only that, but he should

try to get someone to begin the training of Braille and other things, so that the patient may become accustomed to this work before complete blindness sets in. I know from my own experience and from many other cases that this is a great help in such instances.

These were my thoughts when the cruel war began and the blinded soldiers came home from the front. At the beginning of the war I was in England and I stayed there in order to attend a course at the University of London, so I did not get back before the middle of September, 1914. When I arrived happily back in Germany I decided to devote my strength and the rest of my life to these unhappy men who had gone to the war healthy and as free and independent persons, and now came back home broken and blinded and did not know what to do. I found the first five war blinded in the private hospital of Professor Silex, and I went to him and asked if he would allow me to go and cheer his patients up a little and give them instruction in reading and writing. He willingly consented, and on November 22, 1914, I went for the first time to see these men. I found them willing to begin learning, and I taught them reading and writing, Braille, and typewriting. They cheered up very soon, and when this was known in the Ministry of War they sent us for the next few years all of the blinded soldiers who came back from the front. Later on they sent them to their different provinces. So we had throughout the war 600 of them in our school. There are in all 2700 war blinded in Germany. After they had learned reading and writing they then wished to learn other work and to go into professions and business life again. This created some difficulty, because Professor Silex and I soon realized that we could not put these men into blind institutions, homes or asylums, but the men themselves were a great help to us. We had people of all the different classes of society, different professions and different abilities, and we had to separate these into three main divisions. In the first group were men who had had higher educations, such as teachers, officers, students and so on. They were instructed in our school in Braille, German and other languages, ordinary typewriting and medical notation, and then they went to the different universities to study on. They graduated, got their

degrees and went into physicians' and Administration offices. The teachers we got with great difficulty into their former schools for seeing children where they work very successfully. They teach music, chorus singing, history, languages, etc.

The second group were the middle educated people who had been clerks or similar business men and who wanted to get into the business world again. They were trained as typists, stenographers and dictaphone operators. We made some little adjustments on the common typewriters which enabled the blind typists to do the work quite as perfectly as their seeing colleagues. We produced German commercial stenography in Braille and had a stenographic machine made for that purpose. Then there were many men who had been employed by the Post Office. The Postmaster General of Berlin gave us his help in getting these people into the Post service again. Some became telephone operators; some did other things, such as folding telegrams, and so on. One of the soldiers himself helped us to a new occupation. He had been a book binder before the war and now undertook mending documents. He got along very well, and was engaged in the office of the County Council in Berlin. After his service hours he came to the school and taught his comrades this work, and now we have eighty document menders in all in the Administration offices in different towns. Securing positions for our typists was very difficult, because of the prejudice of the employers. When we had trained eight typists we invited the Aldermen of the County Council of Berlin to come and see these men work. They were much surprised and praised the work, but when we asked them to employ some of them, one of the Aldermen said that there was not such a law yet, but another replied, "Then we must have one made," but the law was not made at that time (that was in 1916). Nevertheless, some days later they sent for two of the typists, and thus came about the introduction of this profession for the blind which is now so generally known in Germany. Then there were in this second division many who had formerly been farmers, and through the kindness of a Count we had for two summers the use of one of his castles, with the grounds, and gardeners who trained the men to do again their former work. Many of them then got a little settlement, with some acres of land which they tilled them-

selves. We were able to train only ten or twelve people in massage, because the doctors in Germany do not like this profession for the blind, while in England there are two hundred blind masseurs and eighty of the greatest doctors there recommend them to their patients. The few men whom we trained took their examinations amongst the seeing masseurs and secured positions in hospitals.

Then the third and largest division had to be considered. They were people without much education, who had been laborers, factory workers, etc., before they became blind. In this group also there was one of the soldiers who gave us an idea. He had been a blacksmith, and he told us that he would never do any work other than connected with iron. I happened to be teaching a little blind girl, the daughter of the Director of our great munitions factories, Spandau, Berlin, and I asked him to give me the opportunity of trying some work in these factories. I had to get the permission of the Ministry of War, and then I went to the factories, sat down amongst the laborers and tried many of the works myself. I showed the Directors that it was possible for a blind person to manage the work, and they engaged five of our people. Very soon there were more than twenty or thirty blind workers in all of the different factories in and near Berlin.

This was the beginning of a new era for civilian blind people too. After the war, when millions of men came home from the front to be employed there was great difficulty in finding work for the blind, but out of the more than one million heavily disabled men a union was formed and the men themselves brought before the Government a petition for a law covering the employment of disabled blind. The law was passed in 1919, covering war blinded soldiers. In 1923 there was an amendment to this law, whereby a provision was made for the employment of blind civilians. Afterwards accidentally disabled civilians also came under this law.

Here are a few paragraphs of this law:

All employers who employ at least twenty healthy people are required to employ one heavily disabled. For each fifty healthy employees additional, he is required to employ one more disabled.

Employers to whom this law refers are private enterprises and corporations and public institutions and Administrations.

The disabled who come under this law are persons who are at least 50% handicapped either by war or by accident in civilian life, and those who are blind, deaf and so on.

An employers who does not want to employ a disabled is allowed to give him a settlement of his own, or to put him in a a tenant.

The General After-care Departments for heavily disabled have to work together with the employers in the interest of the disabled. They have to consent if a warning is given to a disabled, and this warning has to be given at least four weeks before dismissal.

If an employer violates the requirements of this law he has to pay a fine of from one to one thousand marks. If a disabled violates this law the Department can withdraw the advantages of the law from him for a time.

The disabled choose men of confidence, who work together with men of the business staff and the men thus chosen work together with the General After-care Department in the interest of the disabled.

When this law went into effect it was wonderful to see how the blind civilians in Germany awoke to independence and self-reliance. They came to us and asked to be trained in the new vocations, so that they might secure work which would take them out of their former conditions, in which they had been dependent on charity, homes and asylums. The Employment Bureau at the Statistical Department in Berlin did a splendid work, the result of which you may see by the following table.

From 1919 to 1926 war and civilian blind persons were given employment as follows:

War Blinded	*Civilians*	*Nature of Employment*
81	106	Metal Industry
4	12	Chemical Industry
0	16	Paper and Cardboard Industry
0	5	Wood Industry
14	43	Food and Victuals
4	28	Textile and Clothing
2	11	Graphical Industry

War Blinded	*Civilians*	*Nature of Employment*
107	52	Offices
16	47	Professions (three)
6	194	Industries for the Blind
8	18	Mixed Professions
Total 242	532	
Combined Total	774	

This is certainly a good result when one thinks of the condition of these poor people before the war, and it is a great joy to see how much happier these blind people are who work amongst the seeing, make the same money and are considered as useful members of society.

At the beginning of the war when some of the blinded soldiers came home the Grand Duke of the Province of Oldenburg introduced the idea of training dogs as guides for the men who were suddenly dependent on their families or friends if they wished to move about. This training has been extended to a high degree, so that now sixteen hundred of our war blinded are guided by dogs, and blind civilians have also asked for these guides. In Oldenburg and in other places in Germany there are special buildings for this purpose; the largest is in Oldenburg itself. There are large kennels for the dogs, grounds filled with all sorts of obstacles and a home for the blind men. Shepherd dogs are brought to these places and seeing trainers do the first work. In about a quarter of a year a dog is trained. The seeing trainer works like a blind man and tells the dog what to do when coming to an obstacle. For instance, when there is a step the dog sits down and does not move until his master has examined the obstacle with his cane. When there is a post or a lantern or anything which might result in an injury if there were a collision the dog draws back and does not go on. If the master drops anything the dog retrieves it and puts it into his hand, and so on. The love of the dog and the blind master for each other is very touching, and the blind man mourns as if he had lost a member of his family when the dog dies or suffers an accident. Many of the blind men can get about only by the help of these dog guides. In the country and in smaller towns the dogs are very satisfactory, but in large cities at street crossings

where there is much traffic the men of course are sometimes obliged to ask for the help of other pedestrians. As a whole, however, the dogs serve very well indeed and the men would keenly feel the loss if they were deprived of their faithful companions.

Section of Obstetrics and Gynecology

INTRALIGAMENTOUS PREGNANCY (FULL TERM)

M. O. MAGID

Patient 26 years old, married two years. Menstruation began at 17 years, regular, 28 day type lasting three days, moderate amount and painful. She consulted me July 2, 1924, complaining of pain in the lower abdomen, more on the left side, and profuse leukorrhea. She gave a history of having had a dilatation and curettage one year previously. Physical examination showed a profuse vaginal discharge, lacerated infected cervix. The uterus was small, anterior in position, slightly limited. Both adnexa were palpable and tender.

On July 16, 1924, I performed a tracheloplasty. Her complaints were markedly relieved. On April 5, 1926, I was called because the patient had amenorrhea since February 20, 1926, nausea, vomiting, faintness and weakness; these symptoms having lasted about two weeks, mostly in the mornings. Physical examination revealed an enlarged soft uterus. Adnexa could not be felt. There was no tenderness in the fornices. On April 16th the patient began to bleed and had some abdominal pains. I sent her to the Bronx Hospital with a diagnosis of threatened abortion. This diagnosis was confirmed by other members of the staff. The patient left the hospital in ten days, all pains and bleeding having ceased.

The pregnancy continued without serious complaint except for a general weakness and morning nausea. Quickening occurred in the latter part of July. The urine had been negative; the blood pressure 120 systolic over 80 diastolic varying very